

H/A

Notice of Allowability

Application No.

10/827,176

Examiner

Melissa J. Koval

Applicant(s)

JAYNES ET AL.

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to ____.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

Melissa J. Koval
Melissa J. Koval

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Delete the current Abstract of the Disclosure and replace it with the following:

"A technique, associated system and computer executable program code, for projecting a superimposed image onto a target display surface under observation of one or more cameras. A projective relationship between each projector being used and the target display surface is determined using a suitable calibration technique. A component image for each projector is then estimated using the information from the calibration, and represented in the frequency domain. Each component image is estimated by: Using the projective relationship, determine a set of sub-sampled, regionally shifted images, represented in the frequency domain; each component image is then composed of a respective set of the sub-sampled, regionally shifted images. In an optimization step, the difference between a sum of the component images and a frequency domain representation of a target image is minimized to produce a second, or subsequent, component image for each projector."

The following is an examiner's statement of reasons for allowance:

The prior art neither shows nor suggests all of the method steps of claim 1, i.e. "determining a projective relationship", "estimating a component image", "using said projective relationship", "composing each said component image", and "minimizing the difference", in combination and particularly:

"(b) estimating a component image for each said projector, comprising:

(1) using said projective relationship, for each of said component images determine a plurality of sub-sampled, regionally shifted images represented in the frequency domain; and

(2) composing each said component image using a respective plurality of said sub-sampled, regionally shifted images; and

(c) minimizing the difference between a sum of said component images and a frequency domain representation of a target image to produce a second component image for each said projector."

The computer executable program code of claim 11 is allowable for essentially the same reasons as claim 1.

The prior art neither shows nor suggests all of the method steps of claim 7, i.e. "determining a projective relationship", "estimating a component image", "using said projective relationship", "composing each said component image", and "performing an optimization", in combination and particularly:

"(1) using said projective relationship, for each of said component images determine a plurality of sub-sampled, regionally shifted images represented in the frequency domain, and

(2) composing each said component image using a respective plurality of said sub-sampled, regionally shifted images; and

(c) performing an optimization using said component images and a frequency domain representation of a target image to produce a second component image for each said projector.”

The computer executable program code of claim 13 is allowable for essentially the same reasons as claim 7.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Thielemans et al. U.S. Patent 6,483,555B1 teaches a universal device and use thereof for the automatic adjustment of a projector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

MJK

Handwritten signature: *W. S. 2012*